Washington State
Liquor and Cannabis Board

Topic:	**Petition for Adoption, Amendment, or Repeal of a State Administrative Rule – DDE Levels**
Date:	June 7, 2023
Presented by:	Dr. Kathy Hoffman, Research Manager

Background

On April 19, 2023, Todd Luther of Okanogan Gold, LLC submitted a petition for adoption, amendment, or repeal of a state administrative rule. The petition requests that the agency "[i]ncrease the maximum allowed levels of DDE in all cannabis products to 0.5 ppm, or to a more acceptable level."

In the rule petition, Mr. Luther provides:

☒ **2. AMEND RULE - I am requesting the agency to change an existing rule.**

List rule number (WAC), if known: Rule on pesticide limits in all Cannabis products.

☒ I am requesting the following change: Increase the maximum allowed levels of DDE in all cannabis products to 0.5 ppm, or to a more acceptable level.

☒ This change is needed because: Low DDE levels are not harmful. Additionally 0.4-ppm is the same as tabacco and 0.5-ppm is in our food supply.

☒ The effect of this rule change will be: Prevent lost jobs and business

☒ The rule is not clearly or simply stated: The rule on pesticides is too broad and should exclude DDE. DDE levels should have it's own rule as it hasent been applied since 1972.

Mr. Luther did not provide additional information or documentation to support his request. Mr. Luther asks that the Board consider emergency rulemaking by way of his rule petition.

Issue

Whether the Board should initiate rulemaking to amend WAC 314-55-108 to consider increasing the current action level, or tolerance, of pesticide chemical residue on cannabis product from 0.1 ppm for pesticides not listed in rule or otherwise authorized for use in the production of cannabis, to 0.5 ppm specifically for dichlorodiphenyldichloroethylene (DDE).

Authority

Laws

RCW 69.50.342(1)(c) describes the Board's specific rulemaking authority concerning approved pesticides and pesticide testing requirements.

Rules

WAC 314-55-084 describes cannabis plant production, including reference to pesticides that may and may not be used in the production of cannabis.

WAC 314-55-108 describes pesticide action levels in cannabis plant production.

Analysis

Rule Background

On October 13, 2013, LCB adopted its first rules concerning the production of cannabis. At the time, pesticide was defined as, "Any substance or mixture of substances intended to prevent, destroy, control, repel, or mitigate any insect, rodent, snail, slug, fungus, weed, and any other form of plant or animal life or virus, except virus on or in a living person or other animal which is normally considered to be a pest; (b) any substance or mixture of substances intended to be used as a plant regulator, defoliant, or desiccant; and (c) any spray adjuvant. Pesticides include substances commonly referred to as herbicides, fungicides, and insecticides."

Additionally, WAC 314-55-084, also adopted on October 13, 2013, provided:

> **WAC 314-55-084 Production of marijuana.**
> Only the following specified soil amendments, fertilizers, other crop production aids, and pesticides may be used in the production of marijuana:
> (1) Materials listed or registered by the Washington state department of agriculture (WSDA) or Organic Materials Review Institute (OMRI) as allowable for use in organic production, processing, and handling under the U.S. Department of Agriculture's national organics standards, also called the National Organic Program (NOP), consistent with requirements at 7 C.F.R. Part 205.
> (2) Pesticides registered by WSDA under chapter 15.58 RCW as allowed for use in the production, processing, and handling of marijuana. Pesticides must be used consistent with the label requirements.
> (3) Commercial fertilizers registered by WSDA under chapter 15.54 RCW.
> (4) Potting soil and other growing media available commercially in the state of Washington may be used in marijuana production. Producers growing outdoors are not required to meet land eligibility requirements outlined in 7 C.F.R. Part 205.202.

On April 24, 2015, Governor Inslee signed (and partially vetoed) Second Substitute Senate Bill (2SSB) 5052 (the cannabis patient protection act) that "uses the regulations in place for the recreational market to provide regulation for the medical use of marijuana." The legislation provided that the Department of Health (DOH), in conjunction with LCB, must adopt rules on requirements for cannabis concentrates, usable cannabis and cannabis infused products sold or provided at no charge to qualifying patients or designated provides. An amendment to RCW 69.50.342, as cited above, provided that the LCB must adopt rules concerning approved pesticides and pesticide testing requirements. DOH and LCB began rule development on separate but collaborative tracks.

On September 8, 2015, the Washington State Department of Agriculture (WSDA) provided a memo (Attachment A) about pesticide screening for medical cannabis to DOH about regulating medical cannabis products. WSDA identified 75 pesticides in three categories: High, moderate, or possible misuse of pesticides on cannabis.

On October 15, 2015, DOH established emergency rules for medically compliant products that required pesticide testing for 13 of the 75 pesticides identified on WSDA's memo with a failure threshold of "*any measurable and positively verified amount of an unapproved pesticide is detected.*" The emergency rules also required heavy metal testing. These two standards – mandatory pesticide and heavy metal testing - distinguish medically compliant product from adult use product.

On May 18, 2016, LCB issued emergency rules as WAC 314-55-108 establishing action levels for 59 prohibited pesticides, with a ***default level of 0.1ppm for all other prohibited pesticides***. The emergency rules were implemented after consultation with WSDA and DOH and included a review of equivalent standards implemented by other states with recreational cannabis markets, specifically including standards established by the Oregon Health Authority (OAH).

Also on May 18, 2016, DOH issued new emergency rules that established what would become known as "medically compliant product" that struck the failure level of "any measurable and verified amount detected" to reference LCB's action level rules, "*A sample of any marijuana product shall be deemed to have failed if a pesticide that is not allowed is detected above the action level for that pesticide as determined by the WSLCB under chapter 314-55 WAC."*

In an August 19, 2016, joint letter from DOH and WSDA provides pesticide action level and other recommendations to LCB (Attachment B). Specifically,

> "Action levels for pesticides on marijuana products should be set lower than Oregon Health Authority (OHA) action levels. ***We suggest 0.1 ppm as a starting point for pesticides with one or more allowed food uses, and 0.01 ppm as a starting point for pesticides with no allowed food uses***." (Emphasis added).

On August 28, 2016, the Quality Assurance Work Group established by LCB began meeting to discuss pesticide testing and action levels, beginning with a review of equivalent standards adopted by other states, again, including Oregon's standards. The work group included industry members (both certified labs and licensees), WSDA and DOH.

On May 31, 2017, LCB adopted new rule section WAC 314-55-108 concerning pesticide action levels in project that addresses lab certification, updates to existing quality assurance rules, and lab accuracy. WAC 314-55-084 was not revised and has not been substantively revised since that time.

DDT (dichlorodiphenyltrichloroethane) and DDE (dichlorodiphenyldichloroethylene)

DDT (dichlorodiphenyltrichloroethane) is a pesticide once widely used to control insects in agriculture and insects that carry diseases. DDT is a white, crystalline solid with no odor or taste. Its use in the U.S. was banned in 1972 because of damage to wildlife, but is still used in some countries, most notably for malaria control.

DDE (dichlorodiphenyldichloroethylene) and DDD (dichlorodiphenyldichloroethane) are chemicals similar to DDT found in small quantities in most DDT products. DDE and DDD are breakdown derivatives of DDT. DDD was also used to kill pests, but its use has also been banned. One form of DDD has been used medically to treat cancer of the adrenal gland.[1]

The National Cancer Institute (NCI) DDE Bioassay suggests the liver is the primary target in mammals. Liver lesions were identified at a 'Lowest-Observed-Adverse-Effect level' of 0.25 mg/kg/day. DDE is most likely carcinogenic to humans based on liver tumor formation in rodent studies.[2] Studies have also shown that DDE is an endocrine disruptor and competes with testicular hormones for the androgen receptor resulting in altered gene expression.[2] The journal, *Environmental Research*, published an article which found that young people with high blood levels of DDEs were twice as likely to be diagnosed with celiac disease.[3]

Authority

The Board has statutory authority under RCW 69.50.342(1)(c) to adopt rules concerning approved pesticides and pesticide testing requirements.

[1] DDT | Washington State Department of Health
[2] Regulatory Determinations Support Document for CCL 2, EPA Report 815-R-08-012, June 2008

Divisional, Interagency, Intergovernmental, DEIB, Social Equity and Other Impacts

Divisional

Licensing

The requested rule revision would not impact the Licensing Division.

Enforcement & Education

Assuming no retroactivity, the requested rule revision would not impact the Enforcement & Education Division.

Finance

The requested rule revision would not impact the Finance Division.

Information Technology/Infrastructure

The requested rule revision would not impact the Information Technology/Infrastructure Division.

Public Health/Prevention

A March 2003 report from the U.S. General Accounting Office on pesticides on tobacco described DDT as an organochlorine pesticide because of its potential to harm humans and the environment. The report states that organochlorine pesticides ". . .persist in the environment—some have remained in soil for over 50 years—and accumulate in body tissue, particularly fat. Organochlorine pesticides are associated with a range of adverse health effects, including cancer and damage to the neurological and reproductive system."[3] Although this report was specifically focused on tobacco, the health risks associated with DDT remain and may even be greater for cannabis concentrates. DDT and its breakdown derivatives do not just quickly disappear or dissolve, they remain in the soil and in the human body. A 2021 article in "Sierra" described research published April 14, 2021, stating that health problems linked to DDT ". . .have persisted across at least three generations, affecting even the granddaughters of women exposed to the chemical in the 1960's."[4]

Currently, there is no compelling reason from a public health perspective to change the threshold limit for these chemicals.

[3] GAO-03-485 Pesticides on Tobacco: Federal Activities to Assess Risks and Monitor Residues

[4] https://www.sierraclub.org/sierra/long-lasting-health-impacts-ddt-highlighted-new-study

Interagency

Department of Health

The requested rule revision would not impact Department of Health operations, rules, or standards.

Labor & Industries

The requested rule revision would not impact Department of Labor & Industries operations, rules, or standards.

Intergovernmental

Tribes

The requested rule revision would not impact tribes.

DEIB, Social Equity

Disproportionate pesticide exposures are often associated with human health harms in low-income and Black, Indigenous, and People of Color (BIPOC) communities in the United States. While the United States population is exposed to pesticides through diet, water, and residential use, governmental regulatory agencies approve pesticides for agricultural use only if it is determined that a pesticide's use will not result in significant harm (Donley et al., 2022). However, some argue that farmworkers, and those exposed to pesticides mainly through their work, potential human health harm related to pesticide exposure is allowed if the purported larger benefit of the pesticide sufficiently off-sets those harms (Bhandari et al., 2020; Donley et al., 2022). The reasons for these disproportionate effects are complex and include but are not limited to a lack of farmworker or production worker protections from pesticide exposure, and the proximity of certain communities to areas where pesticides are manufactured.

In contrast, the issue raised in this petition is unrelated to the impacts of worker or community pesticide exposure. Instead, the petition focuses on increasing the action level, or tolerance for a maximum residue level of a specific pesticide chemical on post-harvest cannabis products. Pesticide action levels set limits for the presence of pesticides in a wide range of environmental and food safety fields to mitigate risk and improve public health and safety. These standards apply to all cannabis products sold in I-502 retail outlets. For this reason, the requested rule revision would likely impact all Washington consumers, rather than a specific group.

Options

Option 1: Deny the petition. Maintains status quo.

- Risk: There is no identifiable risk in denying the petition.
- Benefit: Current rule was developed based on the significant input of Washington state agencies and a state with expertise on the application of pesticides in agricultural settings. There has been no material change in available information concerning the identified pesticide or its breakdown derivatives since the rules were originally adopted concerning these action levels.

Option 2: Deny the petition and offer an alternative approach to the issue.

- Risk: Issuing a guidance document or policy statement does not provide regulatory predictability or stability since neither have the effect of rule.
- Benefit: May offer a rapid option, but at greater risk.

Option 3: Accept the petition, agree to initiate the rulemaking process

- Risk: There is always the possibility that if accepted, a rule petition may not ultimately become rule. Additionally, any change to rule would occur within the standard rule development process timelines, which may be lengthy given the complexity of this subject. Additionally, any rule changes that may result would be *prospective* in nature.
- Benefit: Accepting the petition would allow the agency to review current rule and determine whether current pesticide action levels remain appropriate for the list of pesticides currently identified in rule. However, there has been no material change in available information concerning the identified pesticide or its breakdown derivatives since the rules were originally adopted concerning these action levels

Board Action

After considering the option identified by Director's Office staff, the Board accepts/denies the petition for rulemaking received on April 19, 2023, from Mr. Todd Luther.

_____ Accept _____ Deny _____ _____
David Postman, Chair Date

_____ Accept _____ Deny _____ _____
Ollie Garrett, Board Member Date

_____ Accept _____ Deny _____ _____
Jim Vollendroff, Board Member Date

Attachments

A. WSDA memo to DOH concerning testing of medical cannabis pesticide residues, dated September 8, 2015.
B. Joint memo from DOH and WSDA concerning pesticide action levels, dated August 19, 2016.
C. Email from Mr. Luther with rule petition.
D. Laws and Rules cited under the “Authority” section above.

References

Bhandari, G., Atreya, K., Scheepers, P. and Geissen, V. (2020).
Concentration and distribution of pesticide residues in soil: Non-dietary human health risk assessment. *Chemosphere*, 253(126594).
https://doi.org/10.1016/j.chemosphere.2020.126594.

Donley, N., Bullard, R. D., Economos, J., Figueroa, I., Lee, J., Liebman, A. K., Martinez, D. N., & Shafiei, F. (2022). Pesticides and environmental injustice in the USA: root causes, current regulatory reinforcement and a path forward. *BMC public health*, *22*(1), 708.
https://doi.org/10.1186/s12889-022-13057-4.

ATTACHMENT A

STATE OF WASHINGTON

DEPARTMENT OF AGRICULTURE

P.O. Box 42560 • Olympia, Washington 98504-2560 • http://agr.wa.gov • (360) 902-1800

DATE: September 8, 2015

TO: Kristi Weeks
Review Officer/Policy Counsel
Washington State Department of Health

FROM: Erik Johansen
Policy Assistant
Registration and Licensing Services Program

RE: Testing of Medical Marijuana for Pesticide Residues

My initial suggestions for the Department of Health regarding the testing of medical marijuana for pesticide residues are attached. These suggestions are based on information I have obtained from a variety of sources, and represent my best professional judgement regarding the pesticide active ingredients that are most likely to be misused on marijuana in Washington.

- There are 13 pesticide active ingredients that I have classified as "High likelihood of misuse on marijuana". I suggest that the Department of Health require testing of medical marijuana for residues of all of these ingredients.
- There are 30 pesticide active ingredients that I have classified as "Moderate likelihood of misuse on marijuana". I suggest that the Department of Health require testing of medical marijuana for residues of as many of these ingredients as is feasible.
- In addition, there are 32 pesticide active ingredients that I have classified as "Possible misuse on marijuana". I suggest that the Department of Health consider testing of medical marijuana for residues of these ingredients on a case-by-case basis.

This list will need to be modified periodically, based on factors such as changing industry practices and registration of new pesticide active ingredients. Additionally, the agency is available to provide consultation on the analytical logistics, if that would be helpful.

Please let me know if you have any questions or need any additional information regarding these suggestions. My phone number is (360) 902-2078, and my email is ejohansen@agr.wa.gov.

cc: Steve Fuller, WSDA Jodi Davison, LCB

Abamectin	Miticide	High likelihood of misuse on marijuana
Bifenthrin	Insecticide	High likelihood of misuse on marijuana
Chlormequat chloride	PGR	High likelihood of misuse on marijuana
Daminozide	PGR	High likelihood of misuse on marijuana
DDVP (Dichlorvos)	Insecticide	High likelihood of misuse on marijuana
Imidacloprid	Insecticide	High likelihood of misuse on marijuana
Myclobutanil	Fungicide	High likelihood of misuse on marijuana
Paclobutrazol	PGR	High likelihood of misuse on marijuana
Permethrin	Insecticide	High likelihood of misuse on marijuana
Propiconazole	Fungicide	High likelihood of misuse on marijuana
Spinosad	Insecticide	High likelihood of misuse on marijuana
Spiromesifen	Miticide	High likelihood of misuse on marijuana
Uniconazole	PGR	High likelihood of misuse on marijuana
Acephate	Insecticide	Moderate likelihood of misuse on marijuana
Acequinocyl	Miticide	Moderate likelihood of misuse on marijuana
Acetamiprid	Insecticide	Moderate likelihood of misuse on marijuana
Azoxystrobin	Fungicide	Moderate likelihood of misuse on marijuana
Beta-cyfluthrin	Insecticide	Moderate likelihood of misuse on marijuana
Bifenazate	Miticide	Moderate likelihood of misuse on marijuana
Carbaryl	Insecticide	Moderate likelihood of misuse on marijuana
Chlorfenapyr	Miticide	Moderate likelihood of misuse on marijuana
Chlorothalonil	Fungicide	Moderate likelihood of misuse on marijuana
Coumaphos	Insecticide	Moderate likelihood of misuse on marijuana
Cyfluthrin	Insecticide	Moderate likelihood of misuse on marijuana
Cypermethrin	Insecticide	Moderate likelihood of misuse on marijuana
Deltamethrin	Insecticide	Moderate likelihood of misuse on marijuana
Ethephon	PGR	Moderate likelihood of misuse on marijuana
Etoxazole	Miticide	Moderate likelihood of misuse on marijuana
Fenoxycarb	Insecticide	Moderate likelihood of misuse on marijuana
Fenpyroximate	Miticide	Moderate likelihood of misuse on marijuana
Imazalil	Fungicide	Moderate likelihood of misuse on marijuana
Iprodione	Fungicide	Moderate likelihood of misuse on marijuana
Malathion	Insecticide	Moderate likelihood of misuse on marijuana
N6-Benzyladenine	PGR	Moderate likelihood of misuse on marijuana
NAA (1-Naphthaleneacetic acid)	PGR	Moderate likelihood of misuse on marijuana
Propoxur	Insecticide	Moderate likelihood of misuse on marijuana
Spinetoram	Insecticide	Moderate likelihood of misuse on marijuana
Spirodiclofen	Miticide	Moderate likelihood of misuse on marijuana
Spirotetramat	Miticide	Moderate likelihood of misuse on marijuana
Tebuconazole	Fungicide	Moderate likelihood of misuse on marijuana
Thiamethoxam	Insecticide	Moderate likelihood of misuse on marijuana
Trifloxystrobin	Fungicide	Moderate likelihood of misuse on marijuana
Zeta-cypermethrin	Insecticide	Moderate likelihood of misuse on marijuana
Captan	Fungicide	Possible misuse on marijuana
Chlorpyrifos	Insecticide	Possible misuse on marijuana
Clothianidin	Insecticide	Possible misuse on marijuana
Diazinon	Insecticide	Possible misuse on marijuana

Dicofol	Miticide	Possible misuse on marijuana
Dimethoate	Insecticide	Possible misuse on marijuana
Dinotefuran	Insecticide	Possible misuse on marijuana
Endosulfan	Insecticide	Possible misuse on marijuana
Esfenvalerate	Insecticide	Possible misuse on marijuana
Ethoprop	Insecticide	Possible misuse on marijuana
Fenhexamid	Fungicide	Possible misuse on marijuana
Fenpropathrin	Insecticide	Possible misuse on marijuana
Fipronil	Insecticide	Possible misuse on marijuana
Flonicamid	Insecticide	Possible misuse on marijuana
Fludioxonil	Fungicide	Possible misuse on marijuana
Flurprimidol	PGR	Possible misuse on marijuana
Fosetyl-Al	Fungicide	Possible misuse on marijuana
Hexythiazox	Miticide	Possible misuse on marijuana
Mefenoxam	Fungicide	Possible misuse on marijuana
Mefluidide	PGR	Possible misuse on marijuana
Metalaxyl	Fungicide	Possible misuse on marijuana
Methomyl	Insecticide	Possible misuse on marijuana
Methyl parathion	Insecticide	Possible misuse on marijuana
ODM (Oxydemeton-methyl)	Insecticide	Possible misuse on marijuana
Oxamyl	Insecticide	Possible misuse on marijuana
PCNB (Pentachloronitrobenzene)	Fungicide	Possible misuse on marijuana
Phorate	Insecticide	Possible misuse on marijuana
Phosmet	Insecticide	Possible misuse on marijuana
Propargite	Miticide	Possible misuse on marijuana
Thiophanate-methyl	Fungicide	Possible misuse on marijuana
Triforine	Fungicide	Possible misuse on marijuana
Vinclozolin	Fungicide	Possible misuse on marijuana

ATTACHMENT B

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PUBLIC HEALTH
PO Box 47820 • Olympia, Washington 98504-7820
(360) 236-3000 • TTY Relay Service: (800) 833-6388

August 19, 2016

Timothy Gates, Program Administrator
Marijuana Examiner Program
Washington State Liquor and Cannabis Board
3000 Pacific Avenue SE
Post Office Box 43088
Olympia, Washington 98504-3088

Dear Mr. Gates:

Thank you for inviting us to participate in the Liquor and Cannabis Board (LCB) Quality Assurance Work Group for marijuana regulation. We hope our perspectives from the Washington State Departments of Health and Agriculture are helpful in resolving the complex and challenging issues related to pesticides on marijuana. Our primary advice pertains to the Oregon Health Authority action levels which we believe are not low enough to serve as an effective screen for unauthorized pesticide use nor are they consistent with the levels used to define presence/absence of pesticides in other state and federal pesticide regulatory programs. The Washington State Department of Agriculture has serious concerns with the establishment of action levels for unauthorized pesticides in marijuana, because the proposed action levels are not consistent with federal and state regulation of unauthorized pesticide residues for every other agricultural commodity. Acknowledging that LCB has the authority and may choose to establish pesticide action levels, we provide our specific recommendations and rationale for pesticide quality assurance in LCB final rules on marijuana, below.

Recommendations for the Liquor and Cannabis Board (LCB)

1. Action levels for pesticides on marijuana products should be set lower than Oregon Health Authority (OHA) action levels. We suggest 0.1 ppm as a starting point for pesticides with one or more allowed food uses, and 0.01 ppm as a starting point for pesticides with no allowed food uses.

2. Since laboratory detection limits may be lower than the action level, LCB should consider procedures for responding to laboratory confirmation of an unauthorized pesticide below the action level.

3. Mitigation techniques which reduce the pesticide residue level below the action level could be allowed on a case-by-case basis at the LCB's discretion. Additional testing by the producer must confirm that mitigation techniques were effective in reducing the level below the action limit.

4. Contamination by unauthorized pesticides resulting from other causes, including accidental pesticide drift from a third party, should not exempt the marijuana crop from regulatory action such as recall, remediation, or destruction if the pesticide was detected above the action level. If drift causes a market loss, the grower can pursue that loss with the offending party via legal channels and should develop a plan to protect future crops from loss or damage. Growers should research insurance coverage, and are encouraged to file a complaint with WSDA and initiate an investigation and collection of objective evidence to support allegations of drift.

5. The current LCB system of generating evidence for enforcement with results from contract labs paid for by growers, could create a conflict of interest or the appearance of a conflict of interest. Adding a laboratory accreditation program can help address this provided that the program includes periodic proficiency testing on pesticide analysis.

6. As extraction technology develops, processors should be encouraged or incentivized to explore alternatives to organic solvents for extraction of marijuana. Organic solvents are flammable, potentially toxic to consumers and workers, and may enhance movement of pesticide residues from plant materials into extracts.

Background Information and Rationale for our Recommendations

Washington State has published a list of pesticides that are allowed for use on marijuana (agr.wa.gov/pestfert/pesticides/docs/PesticidesallowedforuseonmarijuanainWashington20160629.pdf). All other pesticides are unauthorized for use on marijuana. In enforcement programs, presence/absence of pesticide residues must be defined because laboratory measurements can differ widely in their capacity to detect and reliably quantify pesticides. We understand that LCB needs a uniform standard for what "none" means. As many agricultural crops use pesticides, and pesticide testing is a routine component of state and federal enforcement programs, there is precedent for defining negligible in pesticide residue testing. These levels are generally in the low parts per billion depending on the pesticide and the crop. To the extent possible, LCB should harmonize with existing enforcement programs in defining presence/absence of pesticides.

Action levels based on presence/absence as defined by laboratory detection limits

Recently the Oregon Health Authority (OHA) set action levels for 59 pesticide active ingredients on marijuana. The OHA action levels defined presence as detection of the pesticides at or above the laboratory limit of quantitation (LOQ) and derived action levels based on what LOQs were deemed to be achievable by Oregon laboratories at the time. We agree with the approach of

defining presence/absence by laboratory limits of quantitation, but have determined that lower action levels are achievable and necessary. We strongly urge LCB to adopt lower action levels in your final rules.

Why action levels should be lowered

- Some OHA action levels are too high to screen for unauthorized use. For example, cyfluthrin and cypermethrin could be intentionally applied to marijuana and still result in plant residues less than the 1 ppm OHA action level. As evidence, consider that legal uses of these two insecticides on other crops are associated with crop tolerances that are 2–20 times lower (in the range of 0.5–0.05 ppm; see 2014 USDA Pesticide Data Program annual summary (www.ama.usda.gov/pdp).
- Some OHA levels are too high to screen for documented pesticide levels on marijuana. Laboratory pesticide detections in marijuana products tested in Oregon are presented in a 2015 white paper developed by the Cannabis Safety Institute (cannabissafetyinstitute.org/wp-content/uploads/2015/06/CSI-Pesticides-White-Paper.pdf). In Figure 3 (page 9), eight out of 16 pesticides tested would have needed laboratory detection limits between 0.1–0.01 ppm to detect these pesticides in marijuana. The 0.2 ppm action levels adopted by Oregon would have missed all detections for diazinon, carbaryl, and propoxur as reported in the white paper.

Lower minimum detection levels are achievable

Most government enforcement laboratories operate with lower pesticide detection levels. FDA laboratories routinely achieve 0.01 ppm laboratory detection limits in their screening of food for pesticides, USDA reports detection limits that are routinely below 0.03 ppm and often below 0.01 ppm in food testing in their Pesticide Data Program, and WSDA enforcement routinely reports laboratory results with $\leq$ 0.01 ppm detection limits in a large variety of agricultural crops.

Marijuana has certain plant properties (such as resin oils and chlorophyll) that will require careful sample preparation, extraction, and clean-up methods followed by mass spectrometry instrumentation to achieve LOQs at or below 0.1 ppm. Hops have some of the same plant qualities and several laboratories routinely reach LOQs of 0.1 ppm for pesticides on hops.[1]

The major barrier to achieving lower detection limits is not technical, it is cost. Although lower analytical targets cost more, they are necessary to be useful as a screen for unauthorized use and to harmonize with regulatory programs.

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[1] Pacific Agricultural Laboratory in Oregon routinely achieves LOQs of 0.10 mg/kg for pesticides in hops (http://www.pacaglab.com/media/pdfs/2014-Hop-Profile.pdf). Biendl et al. published a method that detects a wide variety of pesticides in hops with LOQs at or below 0.10 ppm (https://secure.hanscarl.com/media/pdf/2014/10/BrewingScience_0910_Biendl_2014.pdf).

We recommend 0.1 ppm as a reasonable starting point for action levels for unauthorized use of pesticides on marijuana. We suggest action levels for unauthorized pesticides on marijuana be adjusted downward as necessary to achieve market adherence with pesticide laws.

Why action levels can't be based on human health risk at this time

We agree with work group members that regulatory action levels would ideally reflect potential human health risk of a particular pesticide to the marijuana user. Health risk is a component of federal pesticide tolerances (maximum allowable pesticide levels) on other crops. However, with marijuana, we are lacking key information needed to establish these levels for specific pesticides. For example:

- Toxicity of chronic inhalation of pesticide residues and toxicity of smoked pesticide residues are mostly unknown. Most pesticides will have acute inhalation testing to estimate the lethal concentration for rats inhaling the pesticide over a short period of time. A 90-day inhalation toxicity test that evaluates a number of non-lethal outcomes is more relevant to a frequent smoker but is only sometimes required by EPA. Almost no pesticides will have long-term inhalation testing nor will they have pyrolysis testing that identifies and characterizes the byproducts of combusted pesticide residues that would be inhaled in a smoking scenario.
- On the exposure assessment side, a rapidly evolving variety of products and delivery devices make consumer exposure difficult to characterize. Risk assessment of pesticide residues will need to estimate consumer exposure from inhaling smoked and vaped products, from ingesting edibles and beverages, and from skin exposure to a variety of creams and ointments. There are additional products (e.g., suppositories) that may require novel exposure evaluations.
- EPA requires pyrolysis testing if pesticide concentration is expected to exceed 0.1 ppm on cured tobacco (see EPA Residue Chemistry Test Guidelines 860.1000). According to a 2003 GAO report, Pesticides on Tobacco; Federal activities to assess risks and monitor residues (http://www.gao.gov/new.items/d03485.pdf), EPA "has concluded that the potential for harm to human health from pesticides residues on tobacco at or below the 0.1 ppm level is extremely low and unlikely to result in a risk of concern to smokers."

Although we do not have health-based action levels at this time, our recommendation of 0.1 ppm is in alignment with EPA's determination on the general health risk of pesticides on tobacco. We learned recently that scientists at the California Department of Pesticide Regulation may develop risk assessments for some of the pesticides being used on marijuana in California. We urge you to follow this work and adopt appropriate health-based action levels for specific pesticides when they become available.

Tougher scrutiny for pesticides detected with no approved food uses

EPA approval of pesticides for use on food crops requires a higher level of safety review than is required for ornamental or non-food uses of pesticides. Approval for use on a food crop usually

requires additional toxicity testing and residue chemistry (40 CFR 158, subparts F and O), monitoring for the pesticide in the U.S. diet, and additional health assessment for the dietary pathway. LCB should implement a higher level of scrutiny for pesticides that are unapproved for any use on food crops. We recommend that LCB harmonize with existing target levels for the FDA total diet study for processed foods, and take action when pesticide active ingredients with no allowed food uses are measured at or equal to 0.01 ppm. For comparison, the EPA target level for these pesticides on raw agricultural commodities is 0.001 ppm.

Action levels for marijuana extracts

The work group discussed use of higher action levels for pesticides in marijuana extracts. We did not identify data to justify a uniform conversion factor for extracts nor did we find much information about how different extraction processes may influence the concentration (or reduction) of pesticide residues. We did learn the following:

- Some organic solvents used for marijuana extractions are highly efficient in solubilizing pesticide residues. These may concentrate pesticides in the extraction process.
- It is possible that higher pesticide levels observed in extracts may actually reflect higher pesticide concentrations in the parts of the plants used for extraction. Marijuana extracts are generally made from stems and leaves while retail dried plant material comes from flower parts. Higher concentrations in stems and leaves might occur, for example, if a non-systemic pesticide is applied to plants before the flowers emerged.
- Not all pesticides appear to concentrate in extracts. For example, see Figure 3 in the white paper discussed earlier. While bifenthrin and propoxur levels were generally higher in extracts than in flower parts, approximately equal levels in extracts and flowers were observed for abamectin and carbaryl.
- Because pesticide concentrations may be differently concentrated or even reduced during alternate extraction systems, an equivalent action level in extracted plant material may need to be specific to the extraction process used.

Until more information is available, we do not support use of a uniform conversion factor for pesticide action levels in extracts. Instead, we recommend that action levels in extracts should be based on residue data (provided by the industry) for the specific pesticide(s) of concern and extraction process.

Laboratory accreditation/certification

A program of laboratory accreditation and analysis certification will help assure growers and the LCB that contract labs are accurate and reliable in their marijuana testing services. It can also address potential conflicts of interest inherent in the laboratory-customer relationship. Accreditation in an established Quality System such as ISO 17025 ensures that the laboratory maintains quality assurance procedures and records and that the laboratory output is fit to the

purpose of the customer (i.e., can meet pesticide action levels). We strongly recommend that LCB also require periodic proficiency testing on pesticide analysis methods as part of laboratory quality assurance.

Because marijuana sold in Washington is prohibited from crossing state lines, proficiency testing needs to be prepared and carried out by a reference lab in the state, preferably an independent government laboratory. This reference lab would also help referee disputes and develop analytical methods that support pesticide screening at commercial laboratories.

In closing, we recognize that laboratory screening of marijuana for unauthorized pesticides can provide major quality assurance benefits to this industry. It can support growers in understanding where unanticipated pesticides may be entering their production system, it can provide consumer assurance that marijuana was grown with only authorized pesticides, and it can provide objective evidence to support enforcement action on illegal pesticide use. We also recognize that it is a very expensive tool and is best used in concert with other proven and more economical elements of a compliance program, including proactive education, unannounced inspections, and complaint investigations. Again, we appreciate the invitation by LCB to participate and provide input to proposals for your final quality assurance rules. We hope our recommendations are workable and helpful to your process.

Sincerely,

Brent Barnes
Assistant Director
Washington State Department of Agriculture
Pesticide Management Division

Clark Halvorson
Assistant Secretary
Washington State Department of Health
Environmental Public Health Division

ATTACHMENT C

Hoffman, Katherine (LCB)

From: Todd Luther <todd@tluther.com>
Sent: Wednesday, April 19, 2023 10:10 AM
To: LCB DL Rules
Cc: Hoffman, Katherine (LCB); Wax, Chandra (LCB); Terry Taylor; ANDERS@waldencannabis.com
Subject: PETITION FOR RULE CHANGE - DDE LEVELS
Attachments: PETITION FOR ADOPTION.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

External Email

To whom it may concern,

Please see attached petition for a rule change regarding DDE levels in cannabis products.

I hope there is a sense of urgency within the LCB to update the rule on pesticides as this is having a huge impact in our industry and the sudden shutdown feels very unfair.

Additionally, there is no evidence that low dde levels are harmful, and it's found in food and tobacco products in higher levels than what was found in our cannabis products.

Is there a possibility for an emergency rule change?

Thank you - Todd

Todd Luther
Cell 360-742-8933

PETITION FOR ADOPTION, AMENDMENT, OR REPEAL OF A STATE ADMINISTRATIVE RULE

Print Form

In accordance with RCW 34.05.330, the Office of Financial Management (OFM) created this form for individuals or groups who wish to petition a state agency or institution of higher education to adopt, amend, or repeal an administrative rule. You may use this form to submit your request. You also may contact agencies using other formats, such as a letter or email.

The agency or institution will give full consideration to your petition and will respond to you within 60 days of receiving your petition. For more information on the rule petition process, see Chapter 82-05 of the Washington Administrative Code (WAC) at http://apps.leg.wa.gov/wac/default.aspx?cite=82-05.

CONTACT INFORMATION *(please type or print)*

Petitioner's Name: Todd Luther

Name of Organization: Okanogan Gold, LLC

Mailing Address: 2414 Elmhurst Ct.

City: Bellingham State: wa Zip Code: 98229

Telephone: 360-742-8933 Email: todd@tluther.com

COMPLETING AND SENDING PETITION FORM

- Check all of the boxes that apply.
- Provide relevant examples.
- Include suggested language for a rule, if possible.
- Attach additional pages, if needed.
- Send your petition to the agency with authority to adopt or administer the rule. Here is a list of agencies and their rules coordinators: http://www.leg.wa.gov/CodeReviser/Documents/RClist.htm.

INFORMATION ON RULE PETITION

Agency responsible for adopting or administering the rule: LCB

☐ **1. NEW RULE - I am requesting the agency to adopt a new rule.**

☐ The subject (or purpose) of this rule is: _____

☐ The rule is needed because: _____

☐ The new rule would affect the following people or groups: _____

☒ **2. AMEND RULE - I am requesting the agency to change an existing rule.**

List rule number (WAC), if known: Rule on pesticide limits in all Cannabis products.

☒ I am requesting the following change: Increase the maximum allowed levels of DDE in all cannabis products to 0.5 ppm, or to a more acceptable level.

☒ This change is needed because: Low DDE levels are not harmful. Additionally 0.4-ppm is the same as tabacco and 0.5-ppm is in our food supply.

☒ The effect of this rule change will be: Prevent lost jobs and business

☒ The rule is not clearly or simply stated: The rule on pesticides is too broad and should exclude DDE. DDE levels should have it's own rule as it hasent been applied since 1972.

☐ **3. REPEAL RULE - I am requesting the agency to eliminate an existing rule.**

List rule number (WAC), if known: _____

(Check one or more boxes)

☐ It does not do what it was intended to do.

☐ It is no longer needed because: _____

☐ It imposes unreasonable costs: _____

☐ The agency has no authority to make this rule: _____

☐ It is applied differently to public and private parties: _____

☐ It conflicts with another federal, state, or local law or rule. List conflicting law or rule, if known: _____

☐ It duplicates another federal, state or local law or rule. List duplicate law or rule, if known: _____

☐ Other (please explain): _____

PDF **RCW 69.50.342**

State liquor and cannabis board—Rules.

(1) For the purpose of carrying into effect the provisions of chapter 3, Laws of 2013 according to their true intent or of supplying any deficiency therein, the board may adopt rules not inconsistent with the spirit of chapter 3, Laws of 2013 as are deemed necessary or advisable. Without limiting the generality of the preceding sentence, the board is empowered to adopt rules regarding the following:

(a) The equipment and management of retail outlets and premises where cannabis is produced or processed, and inspection of the retail outlets and premises where cannabis is produced or processed;

(b) The books and records to be created and maintained by licensees, the reports to be made thereon to the board, and inspection of the books and records;

(c) Methods of producing, processing, and packaging cannabis, useable cannabis, cannabis concentrates, and cannabis-infused products; conditions of sanitation; safe handling requirements; approved pesticides and pesticide testing requirements; and standards of ingredients, quality, and identity of cannabis, useable cannabis, cannabis concentrates, and cannabis-infused products produced, processed, packaged, or sold by licensees;

(d) Security requirements for retail outlets and premises where cannabis is produced or processed, and safety protocols for licensees and their employees;

(e) Screening, hiring, training, and supervising employees of licensees;

(f) Retail outlet locations and hours of operation;

(g) Labeling requirements and restrictions on advertisement of cannabis, useable cannabis, cannabis concentrates, cannabis health and beauty aids, and cannabis-infused products for sale in retail outlets;

(h) Forms to be used for purposes of this chapter and chapter **69.51A** RCW or the rules adopted to implement and enforce these chapters, the terms and conditions to be contained in licenses issued under this chapter and chapter **69.51A** RCW, and the qualifications for receiving a license issued under this chapter and chapter **69.51A** RCW, including a criminal history record information check. The board may submit any criminal history record information check to the Washington state patrol and to the identification division of the federal bureau of investigation in order that these agencies may search their records for prior arrests and convictions of the individual or individuals who filled out the forms. The board must require fingerprinting of any applicant whose criminal history record information check is submitted to the federal bureau of investigation;

(i) Application, reinstatement, and renewal fees for licenses issued under this chapter and chapter **69.51A** RCW, and fees for anything done or permitted to be done under the rules adopted to implement and enforce this chapter and chapter **69.51A** RCW;

(j) The manner of giving and serving notices required by this chapter and chapter **69.51A** RCW or rules adopted to implement or enforce these chapters;

(k) Times and periods when, and the manner, methods, and means by which, licensees transport and deliver cannabis, cannabis concentrates, useable cannabis, and cannabis-infused products within the state;

(l) Identification, seizure, confiscation, destruction, or donation to law enforcement for training purposes of all cannabis, cannabis concentrates, useable cannabis, and cannabis-infused products produced, processed, sold, or offered for sale within this state which do not

conform in all respects to the standards prescribed by this chapter or chapter **69.51A** RCW or the rules adopted to implement and enforce these chapters;

(m) The prohibition of any type of device used in conjunction with a cannabis vapor product and the prohibition of the use of any type of additive, solvent, ingredient, or compound in the production and processing of cannabis products, including cannabis vapor products, when the board determines, following consultation with the department of health or any other authority the board deems appropriate, that the device, additive, solvent, ingredient, or compound may pose a risk to public health or youth access; and

(n) Requirements for processors to submit under oath to the department of health a complete list of all constituent substances and the amount and sources thereof in each cannabis vapor product, including all additives, thickening agents, preservatives, compounds, and any other substance used in the production and processing of each cannabis vapor product.

(2) Rules adopted on retail outlets holding medical cannabis endorsements must be adopted in coordination and consultation with the department.

(3) The board must adopt rules to perfect and expand existing programs for compliance education for licensed cannabis businesses and their employees. The rules must include a voluntary compliance program created in consultation with licensed cannabis businesses and their employees. The voluntary compliance program must include recommendations on abating violations of this chapter and rules adopted under this chapter.

[**2022 c 16 § 63**; **2020 c 133 § 3**; **2019 c 394 § 4**; **2015 2nd sp.s. c 4 § 1601**; **2015 c 70 § 7**; **2013 c 3 § 9** (Initiative Measure No. 502, approved November 6, 2012).]

NOTES:

Intent—Finding—2022 c 16: See note following RCW **69.50.101**.

Findings—2020 c 133: "The legislature finds that recent reports of lung illnesses associated with vapor products demand serious attention by the state in the interest of protecting public health and preventing youth access. While state law grants the liquor and cannabis board broad authority to regulate vapor products containing marijuana [cannabis], the legislature finds that risks to public health and youth access can be mitigated by clarifying that the board is granted specific authority to prohibit the use of any additive, solvent, ingredient, or compound in marijuana [cannabis] vapor product production and processing and to prohibit any device used in conjunction with a marijuana [cannabis] vapor product." [**2020 c 133 § 1**.]

Effective date—2020 c 133: "This act is necessary for the immediate preservation of the public peace, health, or safety, or support of the state government and its existing public institutions, and takes effect immediately [March 25, 2020]." [**2020 c 133 § 5**.]

Findings—2019 c 394: See note following RCW **69.50.563**.

Findings—Intent—Effective dates—2015 2nd sp.s. c 4: See notes following RCW **69.50.334**.

Short title—Findings—Intent—References to Washington state liquor control board—Draft legislation—2015 c 70: See notes following RCW **66.08.012**.

Intent—2013 c 3 (Initiative Measure No. 502): See note following RCW **69.50.101**.

PDF

WAC 314-55-084

Cannabis plant production.

(1) Only the following specified soil amendments, fertilizers, other crop production aids, and pesticides may be used in the production of cannabis:

(a) Pesticides registered by WSDA under chapter 15.58 RCW as allowed for use in the production, processing, and handling of cannabis. Pesticides must be used consistent with the label requirements.

(b) Commercial fertilizers registered by WSDA under chapter 15.54 RCW.

(c) Potting soil, crop production aids, soil amendments, and other growing media available commercially in the state of Washington may be used in cannabis production. Producers growing outdoors are not required to meet land eligibility requirements outlined in 7 C.F.R. Part 205.202.

(2) Examples of prohibited products:

(a) The use of products containing plant growth regulators not allowed for use on food crops including, but not limited to, any of the following ingredients, is prohibited:

(i) Ancymidol;
(ii) Chlormequat chloride;
(iii) Clofencet;
(iv) Colchicine;
(v) Colloidal silver;
(vi) Daminozide;
(vii) Dikegulac-sodium;
(viii) Flumetralin;
(ix) Flurprimidol; and
(x) Paclobutrazol.

(b) The use of vitamin-hormone products not intended for use on food crops is prohibited.

(c) The use of products containing the insecticide DDVP (Dichlorvos) is prohibited in all areas where cannabis is being grown or processed.

(3) Soil amendments, fertilizers, growing media, other crop production aids, and pesticides that do not conform to subsections (1) and (2) of this section cannot be used, kept, or stored on the licensed premises.

(4) The following cannabis and cannabis products are subject to seizure and destruction:

(a) Cannabis exposed to unauthorized soil amendments or fertilizers; and

(b) Cannabis with levels of unauthorized pesticides or plant growth regulators as provided in WAC 314-55-108.

[Statutory Authority: RCW 69.50.342 and 2022 c 16 § 168. WSR 22-14-111, § 314-55-084, filed 7/6/22, effective 8/6/22. Statutory Authority: RCW 69.50.325, 69.50.342, 69.50.345, and 69.50.369. WSR 18-22-055, § 314-55-084, filed 10/31/18, effective 12/1/18. Statutory Authority:

RCW **69.50.342** and **69.50.345**. WSR 16-11-110, § 314-55-084, filed 5/18/16, effective 6/18/16; WSR 14-10-044, § 314-55-084, filed 4/30/14, effective 5/31/14. Statutory Authority: RCW **69.50.325**, **69.50.331**, **69.50.342**, **69.50.345**. WSR 13-21-104, § 314-55-084, filed 10/21/13, effective 11/21/13.]

PDF

WAC 314-55-108

Pesticide action levels.

(1) Only pesticides allowed under WAC 314-55-084 may be used in the production of cannabis, and they must be registered by the Washington state department of agriculture (WSDA) under chapter 15.58 RCW.

(2) Pursuant to WAC 314-55-102, if the WSLCB, WSDA, other designee of the WSLCB, or certified lab identifies a pesticide that is not allowed under subsection (1) of this section and is above the action levels provided in subsection (3) of this section, that lot or batch from which the sample was deducted has failed quality control testing and may be subject to a recall as provided in WAC 314-55-225.

(3) The action levels for pesticides are provided in the table below. The action level for all other pesticides that are not listed in the table below or not allowed under subsection (1) of this section is 0.1 ppm.

Analyte	µg/g (ppm)	CAS#
Abamectin (Sum of Isomers)	0.50	71751-41-2
• Avermectin B1a		65195-55-3
• Avermectin B1b		65195-56-4
Acephate	0.40	30560-19-1
Acequinocyl	2.0	57960-19-7
Acetamiprid	0.20	135410-20-7
Aldicarb	0.40	116-06-3
Azoxystrobin	0.20	131860-33-8
Bifenazate	0.20	149877-41-8
Bifenthrin	0.20	82657-04-3
Boscalid	0.40	188425-85-6
Carbaryl	0.20	63-25-2
Carbofuran	0.20	1563-66-2
Chlorantraniliprole	0.20	500008-45-7
Chlorfenapyr	1.0	122453-73-0
Chlorpyrifos	0.20	2921-88-2
Clofentezine	0.20	74115-24-5
Cyfluthrin	1.0	68359-37-5
Cypermethrin	1.0	52315-07-8
Daminozide	1.0	1596-84-5
DDVP (Dichlorvos)	0.10	62-73-7
Diazinon	0.20	333-41-5

Dimethoate	0.20	60-51-5
Ethoprophos	0.20	13194-48-4
Etofenprox	0.40	80844-07-1
Etoxazole	0.20	153233-91-1
Fenoxycarb	0.20	72490-01-8
Fenpyroximate	0.40	134098-61-6
Fipronil	0.40	120068-37-3
Flonicamid	1.0	158062-67-0
Fludioxonil	0.40	131341-86-1
Hexythiazox	1.0	78587-05-0
Imazalil	0.20	35554-44-0
Imidacloprid	0.40	138261-41-3
Kresoxim-methyl	0.40	143390-89-0
Malathion	0.20	121-75-5
Metalaxyl	0.20	57837-19-1
Methiocarb	0.20	2032-65-7
Methomyl	0.40	16752-77-5
Methyl parathion	0.20	298-00-0
MGK-264	0.20	113-48-4
Myclobutanil	0.20	88671-89-0
Naled	0.50	300-76-5
Oxamyl	1.0	23135-22-0
Paclobutrazol	0.40	76738-62-0
Permethrins (Sum of Isomers)	0.20	52645-53-1
• cis-Permethrin		54774-45-7
• trans-Permethrin		51877-74-8
Phosmet	0.20	732-11-6
Piperonyl butoxide	2.0	51-03-6
Prallethrin	0.20	23031-36-9
Propiconazole	0.40	60207-90-1
Propoxur	0.20	114-26-1
Pyrethrins (Sum of Isomers)	1.0	8003-34-7
• Pyrethrin I		121-21-1
• Pyrethrin II		121-29-9
Pyridaben	0.20	96489-71-3

Spinosad (Sum of Isomers)	0.20	168316-95-8
• Spinosyn A		131929-60-7
• Spinosyn D		131929-63-0
Spiromesifen	0.20	283594-90-1
Spirotetramat	0.20	203313-25-1
Spiroxamine	0.40	118134-30-8
Tebuconazole	0.40	80443-41-0
Thiacloprid	0.20	111988-49-9
Thiamethoxam	0.20	153719-23-4
Trifloxystrobin	0.20	141517-21-7

(4) For the purposes of this section, limits have been written to the number of significant digits that laboratories are expected to use when reporting to the board and on associated certificates of analysis.

(5) Except as otherwise provided in this section, licensed cannabis producer or processor that provided a sample that fails quality control testing must dispose of the entire lot or batch from which the sample was taken as provided by cannabis waste disposal requirements in WAC **314-55-097** and document the disposal of the sample pursuant to traceability requirements in WAC **314-55-083**(4) and recordkeeping requirements in WAC **314-55-087**. A licensee's sample that does not test above the pesticide action levels under this section where test results show the presence of a pesticide that is not allowed under subsection (1) of this section may still be subject to an administrative violation if the disallowed pesticide was applied.

(6) Pursuant to WAC **314-55-102**, at the request of the producer or processor, the WSLCB may authorize a retest to validate a failed test result on a case-by-case basis. All costs of the retest will be borne by the producer or the processor requesting the retest.

(7) Pursuant to WAC **314-55-102**, upon request a cannabis licensee must disclose and make available all quality control tests and retest results for the lot or batch of usable cannabis, cannabis concentrates, or cannabis-infused products to the cannabis licensee or retail customer who is considering purchasing the usable cannabis, cannabis concentrates, or cannabis-infused products.

[Statutory Authority: RCW **69.50.345** and **69.50.348**. WSR 22-13-051, § 314-55-108, filed 6/8/22, effective 7/9/22. Statutory Authority: RCW **69.50.342** and **69.50.345**. WSR 17-12-032, § 314-55-108, filed 5/31/17, effective 8/31/17.]